

ATOMIC ENERGY *newsletter*®

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
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Dear Sir:

June 12th, 1956
Vol. 15...No. 9

Two new uranium ore-processing plants are scheduled for Colorado, to be constructed, owned, and operated by commercial companies; one by Atomic Fuel Extraction Corp., Pocatello, Idaho, Jack C. Turner, Moab, president, and the other by Union Carbide Nuclear Co., the nuclear division of Union Carbide & Carbon Corp., New York. Contracts to purchase all uranium concentrates produced by the mills were awarded both firms by the USAEC. Atomic Fuel's mill will be at Bedrock, Colo., about 15 miles west of Uravan, Colo. An acid leach resin-in-pulp circuit will be used to treat the ores. Ores from its own properties as well as those bought from independent producers in the region will be processed. The Union Carbide mill will be constructed at Rifle, Colo., and the firm's plans also include two ore-receiving stations and chemical upgrading plants at Slick Rock, Colo., and Green River, Colo. The new Rifle plant is in addition to the processing mills Union Carbide now operates there and at Uravan. Company-controlled ores and those of independents will be treated by the new mill, similar to the policy followed at its present mills. (Other RAW MATERIAL NEWS, p. 3 this LETTER.)

The U. K. Atomic Energy Authority conducted a one-day symposium on controlled thermonuclear energy last week at the Atomic Energy Research Establishment, Harwell, with representatives from industrial research laboratories, British universities, and Government research establishments attending. The Authority's own staff gave a general account of its fusion energy project; research on the control of the thermonuclear reaction has been going on at Harwell for some time. Main object of the Symposium (which was classified) was to encourage fundamental research work along lines which will assist the work of the Authority. (Other THERMONUCLEAR NEWS, p. 4 this LETTER.)

A new instrument to obtain radiograms using as its energy source the radioisotope thulium was described in a paper presented before the American Urological Association in Boston last fortnight by Donald E. Burke, resident in urology at the Univ. of Calif. Medical Center, Los Angeles. Dr. Burke developed the device to assist in locating kidney stones during surgery; the precise localization of these stones has always been a difficult task during surgery. He told how the device may be used rapidly and conveniently to perform this chore. It is believed the device may be useful in fracture surgery and also during surgery for removal of gall stones. (Other NEW DEVICES, PROCESSES, p. 2 this LETTER.)

After studying the problem of insurance for nuclear power plants, a committee set up by the British Insurance Association has concluded that "although the possibility of an accident causing great loss cannot be entirely ruled out, the precautionary safeguards are so great that the risk of catastrophic accidents is remote". Lloyds, the British insuring group, has now said that it is prepared to offer insurance coverage for nuclear power plants, since the British Insurance Association feels that risks involved are "little different from those encountered in many modern industrial or power production plants". (Other BUSINESS NEWS, p. 5 this LETTER.)

NEW PRODUCTS, PROCESSES & INSTRUMENTS...for nuclear lab & plant...

FROM THE MANUFACTURERS:- A new series of beta gauges (BG-7) with suggested uses in paper and light weight plastics manufacture are said to have twice the sensitivity previously available. Using radioactive krypton as the radiation source, the new instruments are said to offer a maximum desirable sensitivity of approximately 1.0 mg./sq. cm. --Tracerlab, Inc., Boston, Mass.

Terming the assembly of instruments its "Mining Aid Group", this firm now offers a professional mine "package" for uranium ore evaluation, in-mine pinpointing, and drill-hole surveys. The group consists of this firm's #411 Geiger gun; its end window #11 for pinpointing of ore veins in drill faces or mine walls; its rigid probe #12 for radioactive readings in drill holes of sidewalls, ceilings, upward angles, and adits; and its 50' drill hole probe #13 for radioactive visual logging of drill holes and for cliff-face exploration. Transistors are used in the circuits. --Universal Atomics Corp., New York 17, N.Y.

MANUFACTURERS' NOTES:- A new stabilized lead plate glass for radiation protection has been developed by Pilkington Bros., Ltd., London, Eng. The firm points out that it has reduced the density of such glasses (which in large pieces are unwieldy) with its ceria-stabilized glass. This will permit much broader window vision, the company believes.

A 6-page folder on uses of graphite in nuclear energy applications is available from National Carbon Co., 30 E. 42nd St., New York, N.Y.

PRODUCTS FOR MEDICAL PURPOSES:- A kidney function test, using radioactive iodine, which can be performed rapidly and safely in a physician's office, with little or no patient discomfort has been developed at the Univ. of Calif. at Los Angeles Medical Center. The test, which is performed in 10-15 minutes, uses radioactive iodine tagged contrast media (such as Diodrast), external scintillation counters, and electronic equipment. The Diodrast is injected intravenously; scintillation counters placed over kidney areas measure radioactivity and thus show rates of uptake and excretion of test material by the organ. Electronically recorded data (renograms) indicate each kidney's blood supply, function, and other physiological characteristics. The study was a cooperative project of the U.C.L.A. atomic energy project, Medical School, and the Los Angeles Veterans Administration Center.

ATOMIC ENERGY FINANCIAL NEWS...

INSTRUMENT MANUFACTURER EXPECTS IMPROVED YEAR:- Improved results due to new products it will introduce are expected this year by El-Tronics, Inc., Philadelphia, which reported a net loss of \$385,370 last year. The firm makes a variety of electronic and nuclear instruments and devices, both under its own name and on a private brand basis for others. Demand for popularly-priced Geiger counters is now far below its once high level, and this contributed to the firm's reduced income. However, the firm now has a backlog of about \$2 million, which is more than double that of last year at this time; a quarter of this backlog is in Government business.

STOCKHOLDING CHANGES BY CORPORATION OFFICERS:- A recent transaction in a firm which has large uranium holdings was the purchase in March and April by W. H. Bouck, president, of 2,000 common shares of Preston East Dome Mines, Ltd. (Canada), increasing his direct holdings to 8,000.

CANADIAN URANIUM STOCKS ADVANCE ON IMPENDING CONTRACT NEWS:- Although still reflecting the weakness of the United States and Great Britain exchanges, the Canadian exchanges showed selected strength in uranium issues that are to receive premium price sales contracts from Eldorado Mining & Refining, the Government buying agency. These issues: Dyno, Spanish American, Panel Consolidated, Lake Nordic, Stancan, Stanleigh, Rayrock, and Milliken all sold at higher levels. Carried along by the enthusiasm, uranium issues now holding contracts (Gunnar, Algom, Consolidated Denison, etc.) also showed gains of up to \$1 a share. In the same trend, disappointment of traders in uranium stocks which have not received notice of impending contracts showed in selling pressure and lower prices for these shares. (On the New York and Midwest exchanges, U. S. uranium stocks showed little strength, while the "atomic industrials", such as Nuclear Corp. of America, Vitro Corp., etc., were just about holding their own after bottoming in common with the majority of issues that have gone through several weeks of continuing selling pressure.)

RAW MATERIAL...mining, marketing, prospecting...

UNITED STATES:- Mixed reactions by uranium mining people greeted the announcement of the domestic buying policy of the USAEC as it will be after March 31, 1962. (This LETTER, Vol. 15 No. 8: the USAEC will continue to buy domestic uranium ore after the present buying plan expires Mar. 31, 1962, but will generally pay less and may not take all that's offered.) Charles A. Steen, Moab, Utah, head of Utex Exploration Co., and owner of controlling interest in Uranium Reduction Co., now building one of the largest uranium milling plants in the Colorado Plateau area, said that so far as Uranium Reduction is concerned, the new program will mean more money to the uranium miner (from whom the mill buys) with higher grade ore than is now paid. He stated that the schedule will hurt the marginal mine and the marginal mill, especially the mills which were built to handle both vanadium uranium ores and which got high prices for their concentrates. R.W.D. Woods, president, Uranium Institute of America, Denver, Colo., noted that the new policy would further stimulate the current trend to mergers and consolidations within the uranium mining industry which appears to be the only means of survival for those uranium mining concerns whose development funds have run out and which can no longer raise capital through equity financing.

CANADA:- New premium price contracts are in the final stage of negotiation between Eldorado Mining & Refining, Ltd., the official Government buying agency, and eight Canadian mines: Spanish American, Dyno, Panel Consolidated, Lake Nordic, Stancan, Milliken, Stanleigh, and Rayrock. Dollar amounts of the contracts have not yet been announced, but it is believed the eight will total about \$400 million. In addition, there are other applications outstanding from mines in several parts of Canada that have not yet been decided upon. (Mar. 31st, 1956 was the deadline beyond which no more applications for premium price contracts with Eldorado could be filed; without the premium price, many mines cannot profitably mine their low grade uranium ores.)

GREAT BRITAIN:- The U. K. Atomic Energy Authority, with the consent of the Government of Canada, has entered into negotiations with Eldorado Mining & Refining Ltd., for the delivery of a substantial quantity of uranium before Mar. 31st, 1962. The amounts to be obtained will be a major contribution to the supplies of uranium required for the various atomic energy projects in Great Britain. The contract arrangements between the Authority, Eldorado Mining & Refining Ltd., and the individual Canadian mines will be similar to those under which uranium has been supplied to the U. S. Atomic Energy Commission. (In Canada, Trade and Commerce Minister C. D. Howe announced in the Commons at Ottawa last fortnight that Canada now has sufficient uranium ore reserves to supply other nations of the world, in addition to the U.K. and the U.S. Canada will consider requests of other nations for uranium ore for ultimate research purposes, he stated. He noted that while present U.S. uranium ore reserves will be largely depleted by 1962, Canada has such large ore reserves that the export market will be very important to her.)

ARGENTINA:- The first uranium reduction plant in Argentina to produce metallic uranium from ores will be established at Ezeiza, near Buenos Aires, according to the Argentine National Atomic Energy Commission. The country hopes to be able to use its locally produced uranium and thorium in the nuclear reactors the Commission will operate.

INTERNATIONAL ATOMIC ENERGY NEWS...

GREAT BRITAIN:- The first of the two atomic piles in the Calder Hall nuclear power station, which will be the first in the world to supply electricity on a sustained commercial scale from nuclear sources, are now operating. Last fortnight, sufficient uranium had been loaded for the chain reaction to take place and for the first pile to become self-sustaining. Physics measurements and instrument checks are now taking place, and the gradual commissioning of the plant will follow. Official opening of the plant is scheduled for this October. Calder Hall is part of the U.K. Atomic Energy Authority's program for power stations, and is not included in the national program which includes the construction of 12 atomic power stations by electricity authorities during the next ten years at an estimated cost of £300 million. The Authority is also building a replica of the first power station at the same site, and another with four reactors at Chapel Cross, Annan, Dumfriesshire.

NEW BOOKS & OTHER PUBLICATIONS...on nuclear subjects...

Government Contracting in Atomic Energy, by R. A. Tybout. A study of the contractual setup under which the USAEC conducts its operations. 226 pages. (\$4.00) Atomic Energy and Congress, by Morgan Thomas (with R. M. Northrop). The relationships between the USAEC and congressional committees. 301 pages. (\$4.75). Both books published by --University of Michigan Press, Ann Arbor, Mich.

Selling to the U. S. Atomic Energy Commission. Revised 1956 edition. Directory of purchasing offices, products purchased, etc. No. Y3.At7:2Se4/2/956. --Sup't. of Documents, Washington 25, D. C.

The Role of Government in Developing Peaceful Uses of Atomic Energy, by A. Kemp. 53 pages. --American Enterprise Association, 1012 14th St., N.W., Wash., D.C. (\$1.00).

Conference of Academy of Sciences of USSR on Peaceful Uses of Atomic Energy, July 1-5, 1955. English translation. In four volumes: (1) Physical & mathematical sciences. 259 pages. No. Y3.At7:2 Un 33/2/v.1 (\$1.25); (2) Biological sciences. 197 pages. No. Y3-At7:2 Un 33/2/v.4 (\$1.00); (3) Chemical science. 214 pages. No. Y3 At7:2 Un 33/2/v.2 (\$1.00); (4) Technical science. 193 pages. No. Y3.At7:2 Un 33/2/v.3 (\$1.00). --Sup't. of Documents, Wash. 25, D. C.

Radioisotopes in Medicine. A 9-part course given in Sep't. 1953 by Oak Ridge Institute of Nuclear Studies. Part (1) Availability, uses of isotopes; (2) Problems in radiation; (3) Radiation measurement & dosimetry; (4) Tumor localization; (5) Diagnostic & therapeutic uses of radio-iodine; (6) Metabolic & vascular studies; (7) Isotopes in study and treatment of hematologic disorders; (8) Therapy with radioactive colloids; (9) Therapy with external and implanted sources. 817 pages. --Sup't. of Documents, Wash. 25, D. C. (\$5.50).

Portable Reader for DT-60 Dosimeters, by J. C. Schaffert. Description of reader for the DT-60/PD phosphate glass radiation dosimeter, as developed at U. S. Naval Research Laboratory. No. PB-111887. Office of Technical Services, Wash. 25, D. C. (50¢)

Apparatus for Disposal of Fluorine on a Laboratory Scale, by G. Long. Disposing of small amounts of unwanted fluorine. --Atomic Energy Research Establishment, Harwell, England (1s)

Nickel Dip; a Radioisotope Study of Metallic Deposits in Porcelain Enameling, by J. C. Richmond, H. B. Kirkpatrick, W. N. Harrison. Radioactive tracer techniques. 26 pages. --National Advisory Committee for Aeronautics, Wash. 25, D. C.

NOTES:- The group of some 13,000 USAEC technical reports that may be obtained from Office of Technical Services, Wash. 25, D.C., are covered by eight free lists: TID-1901, 2, 3, 4, 5, 6, 7, & 8. Another grouping, Price List No. 25, gives other USAEC reports OTS has available.

THERMONUCLEAR REACTIONS...weapons & other applications...

UNITED KINGDOM:- Hydrogen bombs are to be tested by Great Britain in the Central Pacific early next year, Prime Minister Eden told the House of Commons in London last week. Mr. Eden said there would be a limited number of explosions in the megaton range, and that they would be air bursts. The RAF squadrons involved in the tests are to be based on Christmas Island, which is about 1,300 miles south of the Hawaiian Islands. (A British scientific group exploded an "atomic device" last month in the Monte Bello islands off Western Australia.)

UNITED STATES:- Progress in achieving a controlled thermonuclear reaction was discussed last week at the USAEC conference held at Gatlinburg, Tenn. Concurrently, the USAEC is considering the fundamental question of whether to declassify the whole field of fusion research information. (Last February, the USAEC agreed to permit qualified private companies to examine certain information on fusion reactions. Although some 36 companies were given permits, no information was put into this category. It is believed the delay is due to the imminent possibility of making the information available generally.) Meanwhile, scientific teams are evaluating the first air drop detonation by the U.S. last month of a hydrogen bomb over the Island of Namue, in the Bikini atoll. It was this country's third such thermonuclear explosion, in a total of about sixty-five atomic and hydrogen detonations. (New USAEC tests are scheduled for this October at the Nevada weapon proving grounds. The USAEC intends at that time to use a portion of the 2 million acres recently released by the U.S. Air Force at its Tonopah, Nev., range.)

ATOMIC ENERGY POWER PLANTS...

FIRST CONTRACT SIGNED PROVIDING FEDERAL FUNDS FOR PRIVATELY CONSTRUCTED REACTOR PLANT:- Yankee Atomic Electric Co., Boston, Mass., has received the first USAEC contract providing Federal funds to assist it develop and operate a large-scale nuclear power plant near Rowe, Mass. Contract provides that Yankee Atomic will build and operate a pressurized light water cooled and moderated reactor and electricity generating equipment capable of producing at least 134,000 KW of electricity for distribution by the systems of the several New England utility companies which formed Yankee Atomic and are its stockholders.

Yankee estimates that construction costs will total \$34,500,000 of which \$18,500,000 will be for the reactor and for equipment associated with the reactor portion of the plant; the company will bear these costs. The project will require about \$5 million in research and development funds; the USAEC will perform up to \$1 million of this research and development and will underwrite up to \$4 million performed in private facilities.

Westinghouse Electric are to do development and design for the project, with Stone & Webster handling construction of the plant.

PROGRESS BEING MADE ON DETROIT NUCLEAR POWER PLANT:- Commonwealth Associates, Jackson, Mich., have been retained as architect engineers by Power Reactor Development Co., for the nuclear power plant PRDC will build near Detroit, Mich., Walker L. Cisler, president of Detroit Edison, and who heads PRDC, told a Congressional committee in Washington last fortnight. Mr. Cisler said that United Engineers & Constructors, Philadelphia, will do construction work on the plant. He noted that Allis-Chalmers have been given an order for a 150,000 KW steam turbine generator for the nuclear plant.

PRDC has already spent \$8 million on conceptual design and \$2 million on full scale reactor parts, Mr. Cisler stated. Completion goal is early in 1960, he said.

DESIGN FOR 180,000 KW NUCLEAR POWER PLANT 90% COMPLETE:- Reference design is "90% complete" for the 180,000 KW nuclear power plant which General Electric Co. is building for Commonwealth Edison Co. near Chicago, Francis K. McCune, GE vice-president and general manager of its atomic products division said in Washington last fortnight. GE has 85 people working on the project, while Bechtel Corp., San Francisco, engineer-constructor for the plant, has 25 people assigned to it, Mr. McCune stated. Bechtel has already started on final design on several features of the plant, he said, with plans for foundation and erection essentially complete. In support of its work on the Commonwealth Edison plant, GE has started construction of a \$500,000 heat transfer test unit which will use 10,000 KW of electrical energy, to obtain necessary heat transfer data, Mr. McCune added.

ATOMIC ENERGY BUSINESS NEWS...

SPAIN TO RECEIVE FUNDS TO HELP FINANCE U.S.-MADE NUCLEAR REACTOR:- Financial support will be given by the USAEC to the extent of \$350,000 toward the cost of a research reactor project to be undertaken by the Junta de Energia Nuclear of Spain, according to Lewis L. Strauss, Commission chairman. The funds will be transferred by the USAEC to the Government of Spain upon completion of the project, and will come out of Mutual Security Funds. A firm commitment has been made by the Government of Spain with the General Electric Co. (U.S.) for a 3,000 KW pool type nuclear research reactor to be located in the Moncloa area of Madrid. The GE reactor will use uranium enriched to 20% in uranium-235; the fuel will be provided by the U.S. under the terms of the Spain-U.S. bilateral agreement.

NUCLEAR SUBMARINE ACTIVITY EXPANDS:- A new \$500,000 building has been started at Electric Boat division of General Dynamics Corp. at Groton, Conn., to provide 35,000 more square feet for Electric Boat's design department. The department, with work on three new nuclear submarines now underway, employs 1,350 people. Within the past five years, the department, where designs for the nuclear craft Nautilus and Seawolf were completed, has quintupled in size.

Sincerely,

The Staff,
ATOMIC ENERGY NEWSLETTER

June 12th, 1956

